Format No: CP/TF/01

## TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

| | | |
|---|---|---|
| **Lab ID** | : | **CP-2019-02-21-49** **Date: 19-01-19** |
| **Customer** | : | Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore. |
| **Address** | : | Byatarayanapura Sub Division, BBMP, Bangalore. |
| **Project Name** | : | Construction of Compound Wall Indira Canteen Building and Beautification Work at Hegdenagara Ward No.6 |
| **Agency** | : | Executive Engineer, KRIDL, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010. |
| **Customer's Reference** | : | BBMP/EE/BTP/WO/187/2018-19 |
| **Source of Sample** | : | Sample supplied by Agency |
| **Sample Condition** | : | Satisfactory |
| **Date of Receipt** | : | 16-01-19 |
| **Sample Type** | : | Birla Super 53grade |
| **Reference to BIS codes** | : | IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification ,<br>IS 4031 (Part 1,2 3,4,5, 6,11):1988<br>IS 4031 Part 1 DETERMINATION OF FINENESS BY DRY SIEVING, Clause 4.4<br>IS 4031 Part 2, Determination of Fineness by Blaine Air Permeability Method, Clause 5<br>IS 4031 Part 3, Determination of Soundness, Clause 5,Clause 6<br>IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5<br>IS 4031 Part 5, Determination of Initial & Final Setting Time, Clause 5<br>IS 4031 Part 11,DETERMINATION OF DENSITY , Clause 6 |
| **Date of test** | : | 17-01-19 |
| **Environmental Conditions during test** | : | Temperature: 26°C<br>Humidity: 72% |

| Sl.No. | Physical properties | Results | Requirement as per IS 12269: 2013 |
|---|---|---|---|
| 1 | Fineness by dry sieving (%) | 2.53 | _ |
| 2 | Finess by Air permeablity method ($m^2$/kg,Min) | 287.5 | 225$m^2$/kg, Min |
| 3 | Density (gm/cc) | 3.12 | _ |
| 4 | Standard Consistency (%) | 28.5% | Not specified |
| 5 | Initial Setting time | 155 minutes | Not less than 30 minutes |
| 6 | Final Setting time | 260 minutes | Not more than 600 minutes |
| 7 | Soundness (Le Chatelier's Method) | 2mm | Not more than 10 mm |

**Note:**

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All information furnished by Customer/Representative

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Samples will be disposed after 90 days from the date of issue of test certificate

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**R KARTHIK RECHAN**
Authorized Signatory
**Quality Manager**



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## TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

| | | |
|---|---|---|
| **Lab ID** | : | **CP-2019-02-21-49** **Date: 15-02-19** |
| **Customer** | : | Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore. |
| **Address** | : | Byatarayanapura Sub Division, BBMP, Bangalore. |
| **Project Name** | : | Construction of Compound Wall Indira Canteen Building and Beautification Work at Hegdenagara Ward No.6 |
| **Agency** | : | Executive Engineer, KRIDL, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010. |
| **Customer's Reference** | : | BBMP/EE/BTP/WO/187/2018-19 |
| **Source of Sample** | : | Sample supplied by Agency |
| **Sample Condition** | : | Satisfactory |
| **Date of Receipt** | : | 16-01-19 |
| **Sample Type** | : | Birla Super 53grade |
| **Reference to BIS codes** | : | IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification ,<br>IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5<br>IS 4031 Part 6, Determination of Compressive Strength, Clause 6 |
| **Date of test** | : | 17-01-19 |
| **Environmental Conditions during test** | : | Temperature: 26°C<br>Humidity: 72% |

**Compressive Strength**

| Sl.No. | Physical properties | Results | Requirement as per IS 12269: 2013 |
|---|---|---|---|
| 1 | 3 Days | 29.0N/mm$^2$ | Not less than 27 N/mm$^2$ |
| 2 | 7 Days | 38.5N/mm$^2$ | Not less than 37 N/mm$^2$ |
| 3 | 28 Days | 59.0N/mm$^2$ | Not less than 53 N/mm$^2$ |

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**R KARTHIK RECHAN**
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**Quality Manager**

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## TEST REPORT ON COARSE AGGREGATES

| | | |
|---|---|---|
| **Lab ID** | : | **CP-2019-02-21-49** **Date: 19-01-19** |
| **Customer** | : | Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore. |
| **Address** | : | Byatarayanapura Sub Division, BBMP, Bangalore. |
| **Project Name** | : | Construction of Compound Wall Indira Canteen Building and Beautification Work at Hegdenagara Ward No.6 |
| **Agency** | : | Executive Engineer, KRIDL, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010. |
| **Customer's Reference** | : | BBMP/EE/BTP/WO/187/2018-19 |
| **Source of Sample** | : | Sample supplied by Agency |
| **Sample condition** | : | Satisfactory |
| **Date of Receipt** | : | 16-01-19 |
| **Sample Type** | : | 40mm down size coarse aggregate |
| **Reference to BIS codes** | : | IS: 383:2016 (Specification for Coarse and fine Aggregates )<br>IS: 2386 :1963(Part - 1,3,4) RA2011<br>IS 2386 Part 1: Particle Size and Shape<br>IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption<br>IS 2386 Part 4: Mechanical Properties |
| **Date of test** | : | 16-01-19 |

**SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 40MM DOWN COARSE AGGREGATE:**

**Total weight taken : 15000 grams**

| Sample No. | Sieve No. | Weight Retained in gms | Cumulative Weight Retained in gms | % Cumulative Weight Retained | % Passing | Required as per IS 383:2016 |
|---|---|---|---|---|---|---|
| 1 | 80 mm | 0 | 0 | 0.0 | 100 | 100 |
| 2 | 40 mm | 318 | 318 | 2.1 | 97.9 | 90-100 |
| 3 | 20 mm | 7441 | 7759 | 51.7 | 48.3 | 30-70 |
| 4 | 10 mm | 5152 | 12911 | 86.1 | 13.9 | 10-35 |
| 5 | 4.75 mm | 1711 | 14622 | 97.5 | 2.5 | 0-5 |
| 6 | Pan | 378 | 15000 | 100.0 | 0 | --- |



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## TEST REPORT ON COARSE AGGREGATES

| | | |
|---|---|---|
| **Lab ID** | : | **CP-2019-02-21-49** **Date: 18-01-19** |
| **Customer** | : | Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore. |
| **Address** | : | Byatarayanapura Sub Division, BBMP, Bangalore. |
| **Project Name** | : | Construction of Compound Wall Indira Canteen Building and Beautification Work at Hegdenagara Ward No.6 |
| **Agency** | : | Executive Engineer, KRIDL, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010. |
| **Customer Reference** | : | BBMP/EE/BTP/WO/187/2018-19 |
| **Source of Sample** | : | Sample supplied by Agency |
| **Sample Condition** | : | Satisfactory |
| **Date of Receipt** | : | 16-01-19 |
| **Sample Type/ Size** | : | 20mm down size coarse aggregate |
| **Reference to BIS codes** | : | IS: 383:2016 (Specification for Coarse and fine Aggregates )<br>IS: 2386 :1963(Part - 1,3,4) RA2011<br>IS 2386 Part 1: Particle Size and Shape<br>IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption<br>IS 2386 Part 4: Mechanical Properties |
| **Date of test** | : | 16-01-19 |

**SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 20MM DOWN COARSE AGGREGATE:**

**Total weight taken : 5000 grams**

| Sample No. | Sieve No. | Weight Retained in gms | Cumulative Weight Retained in gms | % Cumulative Weight Retained | % Passing | Required as per IS 383:2016 |
|---|---|---|---|---|---|---|
| 1 | 40 mm | 0 | 0 | 0 | 100 | 100 |
| 2 | 20 mm | 255 | 255 | 5.1 | 94.9 | 90-100 |
| 3 | 10 mm | 2789 | 3044 | 60.9 | 39.1 | 25-55 |
| 4 | 4.75 mm | 1545 | 4589 | 91.8 | 8.2 | 0-10 |
| 5 | Pan | 411 | 5000 | 100 | 0 | _ |



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## TEST REPORT ON COARSE AGGREGATES

**Lab ID** : **CP-2019-02-21-49** **Date: 18-01-19**

### PHYSICAL PROPERTIES

| Sl.no | Tests | Result | Requirements as per IS:383-2016 |
|---|---|---|---|
| 1 | Flakiness Index(%) | 13.2 | Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate |
| 2 | Elongation Index(%) | 12.4 | |
| 3 | Specific Gravity | 2.65 | – |
| 4 | Bulk Density(Loose) (Kg/l) | 1.53 | – |
| 5 | Bulk Density(Compacted) (Kg/l) | 1.55 | – |
| 6 | Water Absorption(%) | 0.25 | – |
| 7 | Aggregate crushing Value(%) | 24.1 | Max 30% for Aggregates to be used in concrete for wearing Surface, In case Aggregate Crushing Value Exceeds 30% then the test for ten percent fines should be conducted for Aggregates to be used in concrete other than for wearing Surface. |
| 8 | Aggregate Impact Value(%) | 23.8 | 30% for Aggregates to be used in concrete for wearing Surface, 45% for Aggregates to be used in concrete other than for wearing Surface. |

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**R KARTHIK RECHAN**
Authorized Signature
**Quality Manager**

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# TEST REPORT OF FINE AGGREGATE

**Lab ID** : **CP-2019-02-21-49** **Date: 18-01-19**

**Customer** : Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.

**Address** : Byatarayanapura Sub Division, BBMP, Bangalore.

**Project Name** : Construction of Compound Wall Indira Canteen Building and Beautification Work at Hegdenagara Ward No.6

**Agency** : Executive Engineer, KRIDL, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010.

**Customer's Reference** : BBMP/EE/BTP/WO/187/2018-19

**Source of Sample** : Sample supplied by Agency

**Sample Condition** : Satisfactory

**Date of Receipt** : 16-01-19

**Sample Type** : Fine Aggregate

**Reference to BIS codes** : IS 383 : 2016 (Specification for Coarse and fine Aggregates)
IS: 2386 :1963(Part - 1, 3) RA2012
IS 2386 Part 1: Particle Size and Shape
IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption

**Date of test** : 16-01-19

**Total weight taken** : 1000 grams

| Sl.no | Sieve Size | Weight Retained (gms) | Cumulative Weight Retained (gms) | % Cumulative Weight Retained | % Passing | Requirement as per IS 383:2016 | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Grading Zone I | Grading Zone II | Grading Zone III | Grading Zone IV |
| 1 | 10 mm | 0 | 0 | 0.0 | 100.0 | 100 | 100 | 100 | 100 |
| 2 | 4.75 mm | 27 | 27 | 2.7 | 97.3 | 90-100 | 90-100 | 90-100 | 95-100 |
| 3 | 2.36 mm | 55 | 82 | 8.2 | 91.8 | 60-95 | 75-100 | 85-100 | 95-100 |
| 4 | 1.18 mm | 239 | 321 | 32.1 | 67.9 | 30-70 | 55-90 | 75-100 | 90-100 |
| 5 | 600 micron | 205 | 526 | 52.6 | 47.4 | 15-34 | 35-59 | 60-79 | 80-100 |
| 6 | 300 micron | 203 | 729 | 72.9 | 27.1 | 5-20 | 8-30 | 12-40 | 15-50 |
| 7 | 150 micron | 191 | 920 | 92.0 | 8.0 | 0-10 | 0-10 | 0-10 | 0-15 |
| 8 | Pan | 80 | 1000 | 100.0 | 0.0 | --- | --- | --- | --- |

**Result :The tested Sample Conforms to Grading Zone II**



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# TEST REPORT OF FINE AGGREGATE

**Lab ID** : **CP-2019-02-21-49** **Date: 18-01-19**

## PHYSICAL PROPERTIES

| Sl.no | Tests | Result | Requirements as per IS 383:2016 |
|---|---|---|---|
| 1 | Water Absorption(%) | 1.51 | – |
| 2 | Specific Gravity | 2.58 | – |
| 3 | Material finer than 75 micron(%) | 6.6 | Uncrushed fine Aggregate Max 3%, Crushed Fine aggregate Max 15%, Mixed Fine aggregate Max 12%, Manufactured Fine aggregate Max 10% |

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**R KARTHIK RECHAN**
Authorized Signatory
**Quality Manager**

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## TEST REPORT ON PHYSICAL REQUIREMENTS OF SOLID CONCRETE BLOCKS

| | | |
|---|---|---|
| **Lab ID** | : | **CP-2019-02-21-49** **Date: 02-02-19** |
| **Customer** | : | Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore. |
| **Address** | : | Byatarayanapura Sub Division, BBMP, Bangalore. |
| **Project Name** | : | Construction of Compound Wall Indira Canteen Building and Beautification Work at Hegdenagara Ward No.6 |
| **Agency** | : | Executive Engineer, KRIDL, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010. |
| **Customer's Reference** | : | BBMP/EE/BTP/WO/187/2018-19 |
| **Source of Sample** | : | Sample supplied by Agency |
| **Sample Condition** | : | Satisfactory |
| **Date of Receipt** | : | 30-01-19 |
| **Sample Type/Size** | : | Solid concrete blocks size (400X200X200)mm |
| **Reference to BIS codes** | : | IS : 2185 (Part 1) : 2005(RA 2010) Concrete Masonry Specification<br>Part 1:Hollow and Solid Concrete Blocks (Dimensions -Annex-B, Clause 9.2 and 10 , Block density Annex -C Clause 9.3 and10, Compressive strength Annex -D Clause 9.4 and 10, Water absorption Annex -E Clause 9.5 and 10) |
| **Date of test** | : | 30-01-19 |

**BLOCK DENSITY:**

| Sl. No. | Measurement of overall Dimensions of Individual Blocks | | | Overall Volume of the Block in Cubic Centimetres | Weight of Oven Dried Block in Kilograms to the nearest 10 Gram | Block Density in Kg/cum*$10^6$ | Avg.Block Density in (Kg/cum) | As per IS 2185(Part 1) :2005 (RA 2010) |
|---|---|---|---|---|---|---|---|---|
| | Length | Breadth | Height | | | | | |
| | mm | mm | mm | ($Cm^3$) | Kg | $Kg/m^3$ | $Kg/m^3$ | |
| 1 | 402 | 203 | 203 | 16566 | 33.520 | 2023.4 | 2034.7 | Not less than 1800$Kg/m^3$ |
| 2 | 401 | 201 | 201 | 16201 | 33.360 | 2059.2 | | |
| 3 | 402 | 202 | 202 | 16403 | 33.16 | 2021.6 | | |

**WATER ABSORPTION:**

| Sl. No. | Wet weight after water absorption | Dry weight (Oven dry) | Water Absorption | Avg.Water Absorption | As per IS 2185(Part 1):2005 (RA 2010) |
|---|---|---|---|---|---|
| | kg | kg | % | % | |
| 1 | 34.350 | 32.460 | 5.82 | 5.67 | Shall not be more than 10% by mass |
| 2 | 34.480 | 32.610 | 5.73 | | |
| 3 | 34.420 | 32.640 | 5.45 | | |



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ID : CP-2019-02-21-49 Date: 02-02-19

DIMENSION ANALYSIS

| Sl.no | Length mm | Breadth mm | Height mm | Requirement as per IS 2185(Part 1):2005 |
|---|---|---|---|---|
| 1 | 402 | 202 | 201 | Length : ± 5mm<br>Breadth : ± 3mm<br>Height : ± 3mm |
| 2 | 401 | 201 | 203 | |
| 3 | 403 | 203 | 201 | |
| 4 | 402 | 201 | 203 | |
| 5 | 401 | 202 | 201 | |
| 6 | 402 | 203 | 199 | |
| 7 | 403 | 202 | 202 | |
| 8 | 401 | 203 | 201 | |
| 9 | 403 | 201 | 203 | |
| 10 | 401 | 203 | 201 | |
| 11 | 402 | 201 | 203 | |
| 12 | 403 | 203 | 201 | |
| 13 | 401 | 201 | 200 | |
| 14 | 402 | 202 | 201 | |
| 15 | 401 | 200 | 203 | |
| 16 | 403 | 202 | 201 | |
| 17 | 401 | 201 | 203 | |
| 18 | 402 | 202 | 201 | |
| 19 | 403 | 202 | 203 | |
| 20 | 402 | 203 | 201 | |
| Average of 20 | **402** | **202** | **202** | |



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ID : CP-2019-02-21-49 Date: 02-02-19

OMPRESSIVE STRENGTH:

| Sl. No. | Size of solid block | | Area | Failure Load | Compressive strength | Average Compressive strength |
|---|---|---|---|---|---|---|
| | Length | Breadth | | | | |
| | mm | mm | ($mm^2$) | (KN) | $N/mm^2$ | ($N/mm^2$) |
| 1 | 402 | 202 | 81204 | 294.6 | 3.6 | 3.8 |
| 2 | 401 | 201 | 80601 | 312.8 | 3.9 | |
| 3 | 403 | 203 | 81809 | 299.1 | 3.7 | |
| 4 | 402 | 201 | 80802 | 309.9 | 3.8 | |
| 5 | 401 | 202 | 81002 | 325.2 | 4.0 | |
| 6 | 402 | 203 | 81606 | 321.9 | 3.9 | |
| 7 | 403 | 202 | 81406 | 303.6 | 3.7 | |
| 8 | 401 | 203 | 81403 | 311.5 | 3.8 | |

**As per IS Requirements (Table 2, Clause 5.1, 5.2 and 9.4)**

| Compressive strength | | |
|---|---|---|
| Grade | Minimum average | Minimum Individual units. |
| C (5.0) | 5.00 $N/mm^2$ | 4.00 $N/mm^2$ |
| C (4.0) | 4.00 $N/mm^2$ | 3.20 $N/mm^2$ |

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Format No: CP/TF/01

# TEST REPORT OF CEMENT CONCRETE KERB STONE

**Lab ID** : **CP-2019-02-21-49** **Date: 12-02-19**

**Customer** : Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.

**Address** : Byatarayanapura Sub Division, BBMP, Bangalore.

**Project Name** : Construction of Compound Wall Indira Canteen Building and Beautification Work at Hegdenagara Ward No.6

**Agency** : Executive Engineer, KRIDL, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010.

**Customer's Reference** : BBMP/EE/BTP/WO/187/2018-19

**Source of Sample** : Sample supplied by Agency

**Sample Condition** : Satisfactory

**Date of Receipt** : 07-02-19

**Sample Type /Size** : CC Kerb Stone/ 450*165*400mm

**Reference to BIS codes** : IS: 516 - 1959 Methods of Tests for Strength of Concrete

**Date of test** : 07/02/2019

| Sl. No. | Identification Mark | Diameter of the core | Height of the core | Weight of the core | Area | Failure Load | Core Compressive strength | Corrected Cylinder Compressive strength | Equivalent Cube Compressive strength |
|---|---|---|---|---|---|---|---|---|---|
| | | (mm) | (mm) | Kg | (Sq.mm) | (KN) | (N/mm2 ) | (N/mm2 ) | (N/mm2 ) |
| 1 | A | 100.06 | 165.53 | 2.864 | 7862 | 142.1 | 18.1 | 18.1 | 22.6 |
| 2 | B | 100.04 | 165.49 | 2.793 | 7859 | 145.2 | 18.5 | 18.5 | 23.1 |
| 3 | C | 100.03 | 165.51 | 2.815 | 7857 | 145.1 | 18.5 | 18.5 | 23.1 |

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Authorized Signatory
**Quality Manager**



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## TEST REPORT OF CERAMIC TILES

| | | |
|---|---|---|
| **Lab ID** | : | **CP-2019-02-21-49** **Date: 18-02-19** |
| **Customer** | : | Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore. |
| **Address** | : | Byatarayanapura Sub Division, BBMP, Bangalore. |
| **Project Name** | : | Construction Compound Wall Indira Canteen Building and Beautification Work at Hegdenagara Ward No.6 |
| **Agency** | : | Executive Engineer, KRIDL, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010. |
| **Customer's Reference** | : | BBMP/EE/BTP/WO/187/2018-19 |
| **Source of Sample** | : | Sample supplied by Agency |
| **Sample Condition** | : | Satisfactory |
| **Date of Receipt** | : | 14-02-19 |
| **Sample Type/ Size** | : | Ceramic tiles (400X400)mm |
| **Reference to BIS codes** | : | IS 13630 (part 1) : 2006, IS 15622:2006 |
| **Date of test** | : | 14-02-19 |

### MEASUREMENTS OF LENGTH, WIDTH AND THICKNESS

| Number Of Specimen | Length measured at position 5mm from the corner | | Breadth measured at position 5mm from the corner | | Thickness measured at thickest part, 4 diagonal segment | | | |
|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 1 | 2 | 1 | 2 | 3 | 4 |
| 1 | 400 | 400 | 400 | 400 | 12.04 | 12.01 | 12.08 | 12.04 |
| 2 | 400 | 400 | 400 | 400 | 12.01 | 12.03 | 12.01 | 12.01 |
| 3 | 400 | 400 | 400 | 400 | 12.03 | 12.01 | 12.03 | 12.03 |
| 4 | 400 | 400 | 400 | 400 | 12.06 | 12.05 | 12.08 | 12.06 |
| 5 | 400 | 400 | 400 | 400 | 12.08 | 12.01 | 12.05 | 12.08 |
| 6 | 400 | 400 | 400 | 400 | 12.03 | 12.07 | 12.03 | 12.07 |
| 7 | 400 | 400 | 400 | 400 | 12.01 | 12.01 | 12.01 | 12.01 |
| 8 | 400 | 400 | 400 | 400 | 12.02 | 12.01 | 12.04 | 12.01 |
| 9 | 400 | 400 | 400 | 400 | 12.04 | 12.04 | 12.02 | 12.04 |
| 10 | 400 | 400 | 400 | 400 | 12.04 | 12.01 | 12.05 | 12.04 |
| **Average** | **400** | | **400** | | **12.04** | | | |



29.2.19
ಪಶುವೈದ್ಯ ಕಾರ್ಯಾಲಯ ಅಧಿಕಾರಿಯವರ
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬೆಂಗಳೂರು-24

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## TEST REPORT OF CERAMIC TILES

### WATER ABSORPTION

| Sl.no | Weight of oven dry sample | Saturated weight of sample | Water absorption by mass | Average value of water absorption |
|---|---|---|---|---|
| 1 | 1202 | 1245 | 3.58 | 3.13 |
| 2 | 1211 | 1244 | 2.73 | |
| 3 | 1254 | 1295 | 3.27 | |
| 4 | 1204 | 1251 | 3.90 | |
| 5 | 1231 | 1258 | 2.19 | |

### MODULUS OF RUPTURE AND BREAKING STRENGTH

Sl.No

| Sl.No. | Dimension (mm) | | | Wet Transverse Strength | Average |
|---|---|---|---|---|---|
| | L | B | T | ($N/mm^2$) | ($N/mm^2$) |
| 1 | 400 | 400 | 8.02 | 12.5 | 12.36 |
| 2 | 400 | 400 | 8.03 | 12.4 | |
| 3 | 401 | 400 | 8.01 | 12.9 | |
| 4 | 400 | 400 | 8.07 | 11.9 | |
| 5 | 400 | 400 | 8.05 | 12.1 | |

**Note:**

The results pertain to the samples received and tested.
All information furnished by Customer/Representative
Any correction in the report will make this report invalid
This report without prior written approval should not be reproduced or published in full or part.
Samples will be disposed after 90 days from the date of issue of test certificate

**FOR CIVIL Pro.**

CIVIL PRO Sig..... Date..... BANGALORE

**R KARTHIK RECHAN**
Authorized Signatory
**Quality Manager**


*End of Report*

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